

IDRC in Mongolia

IDRC support for research in Mongolia began in the early 1990s, after the breakdown of Soviet-style regimes in Eastern Europe and Central Asia. As Mongolia adopted a democratic system and developed a market economy, IDRC support helped the country connect to the Internet and then use information and communication technologies (ICTs) to improve health care and to provide long distance education to Mongolians. In addition, IDRC's long-term support to Mongolia's Ministry of Nature and Environment has improved the management of grasslands so that herders can earn better incomes and preserve the natural resources they depend on for survival.

A grant and technical advice from IDRC in 1994 enabled a local data communications service, Datacom, to provide Internet access in the capital Ulaanbaatar. In 1998, another grant allowed Datacom to test wireless technologies and extend Internet access to all 22 provinces. It used satellite-based Internet technology, which proved itself well-suited to Mongolia's vast, rugged, and sparsely populated land. More than half of the country's 2.6 million citizens live in remote or rural areas, many in communities not connected by roads.

IDRC has since contributed to the government's ICT policy through the Mongolian

Information Development Association. This NGO conducted research and advised the government on the policies that would promote ICT development in the country, culminating in ICT Vision 2010, an ambitious plan to develop a knowledge-based society and to improve the quality of people's lives.

IDRC-supported researchers at the Health Sciences University of Mongolia (HSUM) created a distance diagnosis centre and developed software to link with doctors in three remote areas. HSUM helps the doctors with diagnoses and offers distance education and emergency medical tutorials online. It is now expanding this service to other locations in Mongolia.

HSUM continues research on ICT applications in health by participating in a regional IDRC-supported initiative on distance education. So far, it has tested the delivery of education modules and manuals for doctors via mobile phones, which are spreading fast. In another example of Mongolian researchers partnering with regional colleagues, program developers are translating computer technology to local languages. They have released a complete version of a free, open-source software platform in Mongolian for programmers and they are testing an automatic speech recognition system.

Mongolia's ICT successes have guided similar research in Bangladesh, Bhutan, Laos, Sri Lanka, and Vietnam. IDRC is investigating further

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opportunities to support the development of ICTs in Mongolia, in consultation with program developers, policymakers, and NGOs.

IDRC-supported research is also changing how natural resources, especially grasslands, are managed in Mongolia. The grasslands support more than 35 million head of livestock and 170 000 herding families. However, climate change, overgrazing, and heavy industrial growth threaten this fragile state-owned resource.

Mongolia's Ministry of Nature and Environment recently completed eight years of research and has proven the value of collaboration between government officials and local citizens and the importance of involving members of the herding families when making decisions about access rights and preservation. The improved management, new income-generating activities, and training have increased incomes by as much as 85% in the poorest households in the test sites.

Government representatives worked with and learned from the herders and reflected the research results in new policies and legislation to replicate the collaborative approach in all provinces and districts. In 2005, amendments to the Environmental Protection Law enshrine people's right to use and benefit from natural resources and the obligation to protect them. The new Forestry Act, passed in 2007, also reflects the research findings supported by IDRC. The Ministry of Nature and Environment helped to champion the law, which includes the principles of community participation in decision-making and conservation.

Current research aims to strengthen community-based natural resource management practices in Mongolia and to link Mongolian researchers to other IDRC-supported research partners who are evaluating their effectiveness at building people's capacity in these practices.

In 2004, the then-President of Mongolia, Natsagiin Bagabandi, honoured IDRC with the country's prestigious Friendship Medal in

appreciation of the Centre's support. In 2006, four IDRC program officers won Mongolian awards for their support in ICT development and natural resource management.

Over the past 15 years, IDRC has allocated close to CA\$8.5 million to 24 research initiatives in Mongolia, some regional in scope. Six of these projects are active and represent an investment of CA\$5.6 million.

RESEARCH HIGHLIGHTS

Distance Education for All

Using information and communication technologies to provide distance education in Asia has the potential to satisfy the region's growing thirst for knowledge and need for trained and educated citizens who can fill jobs and create businesses. Distance education provides access to students living in remote and rural communities, and can better meet the demand for teachers and course materials than conventional schools and universities. Today's distance learning practitioners, however, rely on a grab bag of methods, tools, and software governed by a mix of policies and regulations. This makes it more difficult for institutions to deliver distance education and for students to access the courses.

IDRC is supporting research to develop a distance-education model for use throughout Asia. The Virtual University of Pakistan and the Universitas Terbuka of Indonesia are coordinating research on nine specific distance education issues in 11 countries.

The Health Sciences University of Mongolia and the English for Special Purposes Foundation, in Ulaanbaatar, are collaborating with researchers in the Philippines to test the delivery of distance learning through text messaging technology on mobile phones. Trial software includes a guidebook for obstetricians and gynecologists with a module on emergency treatment for pregnant

women. Guidebooks on learning English for waiters and bank tellers are also being piloted.

Another Mongolian partner, InfoCon, is collaborating with researchers in Sri Lanka and Vietnam to evaluate distance-learning software that helps educators create online courses and improve opportunities for teacher-student interaction. The team identified Moodle, an existing open-source platform, as best able to meet the needs of the participating countries. InfoCon has customized this platform and developed installation and user manuals in Mongolian, which it shares publicly through an open-source licence. The team is also developing a set of technical and user manuals in English.

(Project #102791; PAN Distance Learning Technology; Duration: 2005–2011; IDRC allocation: CA\$1 684 400; IDRC contact: Maria Ng Lee Hoon; Research partner: Naveed A. Maalik, Virtual University of Pakistan, M. A. Jinnah Campus, Defence Road, Off Raiwind Road, Lahore, Pakistan; Tel.: 92-42-9200409; Email: rector@vu.edu.pk)

Programming in Mongolian

As experience in Mongolia has shown, information and communication technologies can connect people to the Internet and open access to education and medical knowledge. The Internet is a critical development tool throughout Asia, with the potential to reduce poverty, increase literacy, raise education levels, create jobs, and build democracy. However, since the Internet is dominated by English-language programs and content, its effectiveness has been limited to a small number of programs available in local languages.

Since 2003, IDRC has supported Pakistan's National University of Computer and Emerging Sciences' efforts to coordinate the development of culturally appropriate technologies and software in local languages. In this second phase of support, researchers are focusing on cellphone technology and free open platforms that allow other programmers to build on the original product.

Mongolian research partners recently joined this effort and are already achieving results. InfoCon has released several free products including the complete version of an open-source application suite in Mongolian upon which programmers can build. The National University of Mongolia has collected 5 million Mongolian words and developed an automatic spell-checker for the language's Cyrillic characters. The Mongolian University of Science and Technology is also developing an automatic speech recognition system in Mongolian, which will make computers more user-friendly across the country.

(Project # 103669; PAN Localization Phase II; Duration: 2007–2010; IDRC allocation: CA\$2 700 000; IDRC contact: Maria Ng Lee Hoon; Research partner: Sarmad Hussain, National University of Computer and Emerging Sciences; 852 B Block, Faisal Town, Lahore, Pakistan; Tel: 92-42-111-128-128, ext. 241; Email: sarmad.hussain@nu.edu.pk)

Grasslands and Steppe Co-management

As livestock numbers increase on the grasslands and steppes of Mongolia, poor management practices threaten these fragile pasture lands, which are susceptible to encroachment from the Gobi Desert. Collaboration among community members and local governments is necessary to exploit this common natural resource in a fair and sustainable way.

Working closely with local actors in 30 communities, the Ministry of Nature and Environment introduced and tested agreements by which herders and local governments managed demands for access to grasslands. Researchers also tested animal breeding techniques that improve resilience and productivity and new income-generating opportunities, such as growing vegetables and producing consumer products using milk and wool. They also offered training for herders and government staff on how to make decisions that benefit all community members.

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The research shows that co-management works in Mongolia and the approach is starting to spread from the study sites. The research team is producing educational materials to help guide people as they adopt the approach. The Community Procedure for Community-Based Natural Resource Management (CBNRM), approved by the government in 2006, acts as a blueprint for the spread of CBNRM approaches throughout the whole country.

Current IDRC support aims to strengthen the effectiveness of these practices, help them take root in Mongolia, and implement them in the forestry sector. Led by the Ministry of Nature and Environment, a coalition of partners is introducing co-management concepts, principles, and practices in Mongolia's higher education system. The partners include the Mongolian State University of Agriculture, the National State University of Mongolia, and the Eco-Asia Environmental Institute. In addition, herder groups are strengthening their organizations by forming regional associations.

(Project #104654; Collaborative Learning for the Co-Management of Natural Resources in Mongolia; Duration: 2007–2011; IDRC allocation: CA\$497 800; IDRC contact: Ronnie Vernooy; Research partner: Hijaba Ykhanbai, Ministry of Nature and Environment, Government Building No. 3, Baga Toiruu 44, Ulaanbaatar 11, Mongolia; Tel.: 975-11-312269; Email: ykhanbai@mongol.net)

How to Build Capacity in Natural Resource Management

An important goal of IDRC-supported research on community-based natural resource management (CBNRM) is building the capacity of community members, researchers, and decision-makers to manage resources together and implement conservation measures. However, it is difficult for research partners to evaluate their success in building capacity and to identify their most effective interventions.

The International Potato Center, based in Lima, Peru, is coordinating the evaluation efforts of nine partner organizations in China, Vietnam, the Philippines, and Mongolia. Each partner is developing case studies to assess how they went about developing capacity and how well they succeeded. In Mongolia, the Ministry of Nature and Environment is conducting a case study on its efforts to build capacity for grasslands management among community members.

(Project #103643; Using Evaluation for CBNRM Capacity Development; Duration: 2006–2009; IDRC allocation: CA\$351 500; IDRC contact: Ronnie Vernooy; Research partner: Dindo Campilan, International Potato Center, P.O. Box 1558, Lima 12, Peru; Tel.: 63-49-5368185; Email: d.campilan@cgjar.org)

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November 2008

WWW.IDRC.CA

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